

**Premium Automotive Grade Film**

X2000 Chrome - Metallized Series

Issued: 08/23/2006

**Product Description:**

Universal Products, Inc. X2000 Chrome Series cast film is a premium quality, flexible thin-face, exterior-durable product. X2000 film is coated with an aggressive adhesive that offers a strong initial bond and excellent long-term adhesion to most medium and high surface energy substrates. X2000 Series films are recommended for use as decorative decals, accent striping and diecut parts for automotive, marine and recreational vehicle applications.

**Construction:**

Film:	2.0 mil (51 $\mu$ m) Premium durable film (halogen and chlorine free)
Adhesive:	1.0 mil (25 $\mu$ m) Permanent acrylic, pressure-sensitive
Release Liner:	90# Stayflat

**Physical Properties:**

Outdoor Durability:	Up to 7 years - moderate climate, unprinted film, vertically applied.
Ambient Air Application Temperature:	+60°F (16° C) through 90°F (33° C)
Application Surface:	Flat and simple curves, high and moderate energy substrates and coatings. Not recommended for use on severe compound curved surfaces. Not recommended for use on LSE plastics, textured surfaces or partially cured substrates.
Service Temperature Range:	-50°F to +180°F (-46° C to +82° C) (Reasonable range of temperatures which would be expected under normal environmental time and temperature conditions.)
Typical Film Caliper:	3.0 mils (76 $\mu$ m) with adhesive.
Chemical Resistance:	Resistant to most petroleum based oils, greases and aliphatic solvents. Resistant to mild acids, alkalis and salt solutions
Typical Adhesion Values:	180° Peels
ASTM 1000 (lb./inch)	Substrate      10 min.      24 hrs (after 1wk @ 160F) Stainless Steel    3.3 lbs. (578 N/m)    5.6 lbs. (980 N/m)
Shelf Life:	One year when stored at temperatures under 73°F (23° C) and 50% RH
Dimensional Stability:	Less than 0.015" (0.4mm). Determined by measuring shrinkage of film applied to 3" X 6" aluminum test panel followed by 48 hours of heat aging at 160°F (67° C)
Tensile:	4.0 lbs./in. to 8.0 lbs./in. (0.7 kg/cm to 1.5 kg/cm)
Elongation:	50% minimum
Printing Recommendations:	Thermal Transfer Printing Screen Printing

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**Use Guidelines:**

- X2000 Series films should only be applied to clean, dry surfaces.
- X2000 Series Film is not repositionable. Some adhesive splitting and/or film breakage may be encountered during attempts to reposition the film and during film removal activities.
- X2000 Series films are not impact-resistant products. Application to areas that receive significant instances of repeated impact or abrasion (such as bumpers and rocker panels) should be avoided.
- Attempts to apply the product to surfaces below 50°F may result in lifting the graphic during premask removal activities.
- X2000 Series films are not recommended for use on textured surfaces, complex curvatures or low surface energy substrates or coatings such as powdercoat paint and low energy plastics.
- A reduction in long-term durability should be expected if the product is applied in a horizontal position.
- Long-term durability will be reduced in locations that experience high levels of UV light exposure (Florida, South and West Texas, New Mexico, Arizona, Nevada, Utah, California and locations with elevations above 3000').
- When spray washing, high-pressure nozzles should be held no closer than 24" from applied graphics.
- High-pressure cleaning sprays with water pressures above 1200 psi and/or water temperatures above 120F should not be used on X2000 Series films.

**Test Results:** (unprinted film)

QUV - 2000 hrs	No effect
Sunshine WOM - 2000 hrs	No effect
Kansas Outdoor Weathering - 2 years (horizontal exposure)	No effect
Combined Cyclic Corrosion - 125 cycles	No effect
Chemical Resistance	
10% HCl - 5 min	No effect
10% NH <sub>4</sub> OH - 5 min	No effect
Reference Fuel - 1 hr	No effect
Xylol - 1 min	No effect
Toluol - 1 min	No effect
Petrol - 30 min	No effect
Mineral Spirit - 10 min	No effect
Methyl Alcohol - 10 min	Slight Whitening

*The information provided herein is obtained using standard industry laboratory test methods, which are believed to be reliable. The listed average values are intended only as a source of information and are not intended for use as a specification, guarantee or warranty. The data presented is accurate at the time of publication, but subject to change without notice as product is improved. All products are sold with the understanding that the purchaser has independently determined the suitability of such products for its purposes.*